

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY *v.* FORMICA INSULATION COMPANY.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

No. 102. Argued October 22, 23, 1924.—Decided December 8, 1924.

1. An assignment of a patent, or of the invention upon which a patent is subsequently granted to the assignee, though not required to be under seal, works an estoppel as by deed, preventing the assignor from denying the novelty and utility of the patented invention when sued by the assignee for infringement. P. 348.
2. This estoppel, however,—distinct from any that might arise *in pais* from special representation,—while it estops the assignor from denying the validity of the claims, does not prevent him from narrowing or qualifying their construction by showing the state of the art. Pp. 350, 352.
3. The estoppel is applicable to claims added by an assignee and allowed by the Patent Office after the assignment, which were foreshadowed by the specifications sworn to by the assignor and accompanying his application. P. 353.
4. But it will not be enlarged by a claim originally made by the assignor but so manifestly invalid that it was promptly rejected by the Patent Office as embracing the prior art. P. 354.
5. Patent No. 1,284,432, issued to the plaintiff as assignee of O'Connor, covering a process of making composite electric insulation materials by coating sheets of fibrous material, such as cardboard, with adhesive binders and subjecting them to heat and pressure, applies, as between assignor and assignee, to nonplaniform articles (claims 11 and 12, added after assignment) but only where the "two-step" procedure,—viz., application of heat and high pressure to the superposed sheets and cooling them, and then the baking of them under lower pressure,—is employed in the manufacture. P. 353.

288 Fed 330, affirmed.

THIS is a writ of certiorari to the Circuit Court of Appeals for the Sixth Circuit in a patent suit. The Westinghouse Electric Company sued the Formica Com-

pany charging it with infringement of Claims 11 and 12 of Patent No. 1,284,432, issued November 12, 1918, to the complainant as assignee, on an application of O'Connor filed February 1, 1913. The patent covered a process for making composite electric insulation materials using paper, muslin, or other fibrous material. The fabric was to be coated on one side with an adhesive liquid, such as bakelite, a condensation product of phenol and formaldehyde. It was then dried by passing it over a series of rollers in a steam-heated oven. The thickness of the coating retained by the paper was regulated by varying the distance between the two rollers and by altering the viscosity of the liquid. The prepared paper was cut into sheets of any desired size, and a plate built up to the required thickness by placing the sheets together, with the untreated side of each sheet next to the treated side of the adjacent sheet. The built-up plate was then placed between thin sheet steel plates on which had been rubbed a small amount of machine oil. Any desired number of the steel plates carrying the sheets of paper were placed between the platens of a hydraulic press which had been previously heated by steam. The press was closed and pressure applied to as much as 800 pounds per square inch. Steam heat was first applied and then a cooling period followed. The period of pressure and heat was varied in proportion to the thickness of the plate according to a table set forth. The effect was firmly to cement together the sheets of paper and further to impregnate the paper with the bakelite. Thus the plate was transformed into a hard and compact mass. After cooling, the plates of insulation were removed from the press and clamped between steel plates to prevent warping during the baking. The plates were then placed in ovens, with an air pressure of 140 pounds per square inch, and the temperature regulated between 100 and 140 degrees centigrade. These conditions were main-

tained for approximately eight hours, when the plates were removed from the oven and the finished product allowed to cool. The specifications further said that, while the process was used for plates, the material could be similarly produced in the form of channel pieces or tubes that were cylindrical or rectangular in cross section or of other shape, as desired, by pressing in forms of the proper shape. The resultant material had a specific gravity of approximately 1.25, was practically nonabsorbent, even when soaked in hot water, and was insoluble.

The first ten claims subsequently allowed in the patent referred to the so-called "two-step" process, namely, first, the application of heat and pressure to the superposed sheets and cooling them, and second, the baking of them under a lower pressure.

The 11th and 12th claims, however, were as follows:

"11. The process of manufacturing a non-planiform article which consists in superposing a plurality of layers of fibrous material associated with an adhesive substance that is adapted to harden under the influence of heat and pressure into a substantially infusible and insoluble condition, and molding the superposed layers by means of a form of the proper shape while applying pressure and heat to compact and harden the materials.

"12. The process of manufacturing a non-planiform article which consists in superposing a plurality of layers of fibrous material associated with a phenolic condensation product and molding the superposed layers by means of a form of the proper shape while applying pressure and heat to compact and harden the materials."

It will be observed that there is no express provision or requirement in the 11th and 12th claims for the "two-step" process as an element. The defendant does not use the two-step process but does make non-planiform articles.

The defenses were that the two claims were invalid for want of novelty, or if valid must be limited to the

two-step process. A second defense was that complainant had been guilty of laches estopping it from prosecuting the action, in that it had known of the defendant's manufacture of its composition and its large investment in the business without objection for four years before the claims Nos. 11 and 12 were secured by the defendant as assignee from the Patent Office and did not sue for three years thereafter.

In reply, the plaintiff urged that the defendant, being in privity with O'Connor in the assignment and the infringement, was estopped to dispute the validity of the 11th and 12th claims construed according to the ordinary meaning of their language, which, as it contended, did not require the two-step process.

The District Court sustained the defense based on complainant's laches and dismissed the bill.

On appeal, the Circuit Court of Appeals held that the defense of laches could not be sustained. Coming to consider the defense of estoppel, the Court held that on the facts no estoppel arose as to the claims sued on, and, proceeding then to the merits, found that claims 11 and 12 were invalid for lack of invention.

O'Connor was a mechanical engineer, and after graduation from college entered the employ of the Westinghouse Company at a small salary, with the understanding that he was to be allowed to work in association with experienced engineers and gain experience in the line of his profession, and that inventions made by him when in the company's employ were to become the property of the company and to be assigned by him to it. O'Connor made this invention and disclosed it by written description to the company, which through its legal department prepared his application for a patent and an assignment, both of which he executed, receiving the nominal consideration of one dollar. Thereafter, pending the appli-

cation for the patent, O'Connor left the company's employ and associated himself in business with two others in the manufacture of electric insulating material, in a partnership, which was thereafter organized into a corporation known as the Formica Company, and its stock divided between the partners. From 1913 the partnership and succeeding company have been engaged in the manufacture and sale of laminated products having a phenolic condensation binder. They have made non-planiform articles, as well as flat plates, openly and with the knowledge and acquiescence of the Westinghouse Company from the beginning in 1913 down to the time this suit was brought July 6, 1920.

When the application for the patent here in suit was filed and was assigned to the company, there were no claims based on a distinction between flat plates and non-planiform articles. But the specifications signed by O'Connor contained the following: "While the process above described is that used for making plates, the insulating material may be produced in the form of channel pieces or tubes that are cylindrical or rectangular in cross section or of other shape, as desired, by pressing in forms of the proper shape."

The art of making insulating material was well advanced when O'Connor entered it. A Haefely patent owned by the Westinghouse Company, when O'Connor began his experiments, was for a process for making a hard material offering resistance to the electric current out of paper covered with varnish, wound around a mandrel and subjected to pressure and heat. The art also showed a forming press by Haefely for pressure of flat articles for such a purpose. There was a process patent to Thomson for making insulating material by applying to paper sheets an earthy or mineral substance with binding material, piling such sheets together and drying and heating the resulting mass. Baekeland had

invented much in this art and all before O'Connor. One of his discoveries was that of the "bakelite" which O'Connor suggests using in his process—a combination of phenol and formaldehyde, a viscous fluid resisting the electric current and attaining great hardness under heat and pressure for use as a binder. Another patent of Baekeland was for "a composite cardboard consisting of superposed layers of paper or the like combined with intermediate layers of an insoluble, infusible condensation product of phenols and formaldehyde," in which he described his process as follows:

"I apply to the surface of any of the ordinary grades of paper, or to asbestos paper or the like, a coating of a liquid condensation product of phenols and formaldehyde of such character that it is capable of transformation under the action of heat into an insoluble and infusible body. For this purpose I may use either a liquid condensation product of the character described, or a solution of the same in alcohol or other appropriate solvent. This layer is permitted to dry somewhat, when a second sheet of paper is superposed upon the first and similarly treated; or the several layers may be coated and preferably dried before being superposed. The condensation product may be applied to one or both sides of the sheets. The desired number of sheets having been assembled, the composite article is compacted by pressure, with or without the aid of heat. Heat is now applied in order to effect the transformation of the condensation product into an insoluble and infusible body."

Mr. John C. Kerr and Mr. Drury W. Cooper for petitioner.

Mr. Frederic D. McKenney and Mr. John H. Lee, with whom *Mr. Wm. H. Dyrenforth* was on the brief, for respondent.

MR. CHIEF JUSTICE TAFT delivered the opinion of the Court.

The important question in this case is the operation of the principle of estoppel on the character of defense to which the assignor of a patented invention is limited in a suit for infringement by the assignee. We may first usefully consider the rule that should obtain where the assignment is made after the issue of the patent, and then the difference in the rule, if any, where the assignment was made before the granting of the patent.

Congress under its power to secure for limited times to inventors the exclusive right to their discoveries, has enacted laws conferring such an exclusive right by patent after an application with specification of the invention and claims therefor and a favorable decision by the Commissioner of Patents. The patent of the exclusive right against the public carries with it a presumption of its validity. *Agawam Co. v. Jordan*, 7 Wall. 583; *Blanchard v. Putnam*, 8 Wall. 420; *Miller v. Eagle Mfg. Co.*, 151 U. S. 186; *Boyd v. Janesville Hay Tool Co.*, 158 U. S. 260. It is not conclusive but the presumption gives the grant substance and value. By § 4898, Rev. Stats., every such patent or any interest therein shall be assignable in law by an instrument in writing, and the patentee or his assigns or legal representatives may, in like manner, grant and convey an exclusive right under his patent to the whole or any specified part of the United States. The section further provides that an assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent Office within three months from the date thereof. While a seal is not required to make an assignment legal, *Gottfried v. Miller*, 104 U. S. 521, there seems to be no reason why the principles of estoppel by deed should not apply to assignment of a patent right in accordance with the

statute. Its purpose is to furnish written and recorded evidence of title and to protect the purchaser of the title as recorded for value without notice. It was manifestly intended by Congress to surround the conveyance of patent property with safeguards resembling those usually attaching to that of land. This Court has recognized the analogy between estates in land by estoppel and the right to enjoy a patent right in the use of an article conveyed by one without authority but who acquires it by subsequent conveyance. *Gottfried v. Miller*, 104 U. S. 521; *Littlefield v. Perry*, 21 Wall. 205.

There are no cases in this Court in which the application of the principle of estoppel as by deed to the conveyance or assignment of patent property has been fully considered. But there are many in the reports of the Circuit and District Court decisions and in those of the Circuit Court of Appeals. They began as early as 1880 in *Faulks v. Kamp*, 3 Fed. 898, and were followed by a myriad. The rule supported by them is that an assignor of a patent right is estopped to attack the utility, novelty or validity of a patented invention which he has assigned or granted as against any one claiming the right under his assignment or grant. As to the rest of the world, the patent may have no efficacy and create no right of monopoly; but the assignor can not be heard to question the right of his assignee to exclude him from its use. *Curran v. Burdsall*, 20 Fed. 835; *Ball & Socket Fastener Co. v. Ball Glove Fastening Co.*, 58 Fed. 818; *Woodward v. Boston Lasting Machine Co.*, 60 Fed. 283, 284; *Babcock v. Clarkson*, 63 Fed. 607; *Noonan v. Chester Park Athletic Co.*, 99 Fed. 90, 91. There are later cases in nearly all the Circuit Courts of Appeal to the same point. In view of the usual finality of patent decisions in the Circuit Courts of Appeal, this Court will not now lightly disturb a rule well settled by forty-five years of judicial consideration and conclusion in those courts.

The analogy between estoppel in conveyances of land and estoppel in assignments of a patent right is clear. If one lawfully conveys to another a patented right to exclude the public from the making, using and vending of an invention, fair dealing should prevent him from derogating from the title he has assigned, just as it estops a grantor of a deed of land from impeaching the effect of his solemn act as against his grantee. The grantor purports to convey the right to exclude others, in the one instance, from a defined tract of land, and in the other, from a described and limited field of the useful arts. The difference between the two cases is only the practical one of fixing exactly what is the subject matter conveyed. A tract of land is easily determined by survey. Not so the scope of a patent right for an invention.

As between the owner of a patent and the public, the scope of the right of exclusion granted is to be determined in the light of the state of the art at the time of the invention. Can the state of the art be shown in a suit by the assignee of a patent against the assignor for infringement to narrow or qualify the construction of the claims and relieve the assignor from the charge? The Circuit Court of Appeals for the Seventh Circuit in *Siemens-Halske Electric Co. v. Duncan Electric Co.*, 142 Fed. 157, seems to exclude any consideration of evidence of this kind for such a purpose. The same view is indicated in subsequent decisions of that court. *Chicago & Alton Ry. Co. v. Pressed Steel Car Co.*, 243 Fed. 883, 887; *Foltz Smokeless Furnace Co. v. Eureka Smokeless Furnace Co.*, 256 Fed. 847. We think, however, that the better rule, in view of the peculiar character of patent property, is that the state of the art may be considered. Otherwise the most satisfactory means of measuring the extent of the grant the Government intended and which the assignor assigned would be denied to the court in

reaching a just conclusion. Of course, the state of the art can not be used to destroy the patent and defeat the grant, because the assignor is estopped to do this. But the state of the art may be used to construe and narrow the claims of the patent, conceding their validity. The distinction may be a nice one but seems to be workable. Such evidence might not be permissible in a case in which the assignor made specific representations as to the scope of the claims and their construction, inconsistent with the state of the art, on the faith of which the assignee purchased; but that would be a special instance of estoppel by conduct. We are dealing only with the estoppel of an assignment based on the specifications and claims without special matter *in pais*.

Mr. Justice Lurton, when Circuit Judge, speaking for the Circuit Court of Appeals of the Sixth Circuit, in *Noonan v. Chester Park Athletic Co.*, 99 Fed. 90, 91, used this language:

"It seems to be well settled that the assignor of a patent is estopped from saying his patent is void for want of novelty or utility, or because anticipated by prior inventions. But this estoppel, for manifest reasons, does not prevent him from denying infringement. To determine such an issue, it is admissible to show the state of the art involved, that the court may see what the thing was which was assigned, and thus determine the primary or secondary character of the patent assigned, and the extent to which the doctrine of equivalents may be invoked against an infringer. The court will not assume against an assignor, and in favor of his assignee, anything more than that the invention presented a sufficient degree of utility and novelty to justify the issuance of the patent assigned, and will apply to the patent the same rule of construction, with this limitation, which would be applicable between the patentee and a stranger."

And he cites the following cases as sustaining this view:

Circuit Court of Appeals, First Circuit. *Ball & Socket Fastener Co. v. Ball Glove Fastening Co.*, 58 Fed. 818; *Babcock v. Clarkson*, 63 Fed. 607; *Martin Hill Cash-Carrier Co. v. Martin*, 67 Fed. 786, 787. Since the *Noonan Case*, the view thus announced has been approved in the Circuit Court of Appeals of the Second Circuit in *Standard Plunger Elevator Co. v. Stokes*, 212 Fed. 941, 943; of the Third Circuit in *Roessing-Ernst Co. v. Coal & Coke By-Products Co.*, 219 Fed. 898, 899; *Piano Motors Corporation v. Motor Player Corporation*, 282 Fed. 435, 437; of the Fourth Circuit in *Leader Plow Co. v. Bridgewater Plow Co.*, 237 Fed. 376, 377; of the Sixth Circuit in *Smith v. Ridgely*, 103 Fed. 875; *Babcock & Wilcox Co. v. Toledo Boiler Works Co.*, 170 Fed. 81, 85; *United States Frumentum Co. v. Lauhoff*, 216 Fed. 610; *Schiebel Toy & Novelty Co. v. Clark*, 217 Fed. 760, 763; of the Eighth Circuit in *Moon-Hopkins Co. v. Dalton Co.*, 236 Fed. 936, 937; and of the Ninth Circuit in *Leather Grille & Drapery Co. v. Christopherson*, 182 Fed. 817.

We have been speaking of the application of estoppel in the assignment of patents after they have been granted and their specifications and claims have been fixed. The case before us, however, concerns assignment of an invention and an inchoate right to a patent therefor before the granting of it which, after the assignment at the instance of the assignee, ripened into a patent. Section 4895 of the Revised Statutes authorizes the granting of a patent to the assignee of the inventor. The assignment must be first entered of record in the Patent Office, and in all such cases the application must be made and the specification sworn to by the inventor. It is apparent that the scope of the right conveyed in such an assignment is much less certainly defined than that of a granted patent, and the question of the extent of the estoppel

against the assignor of such an inchoate right is more difficult to determine than in the case of a patent assigned after its granting. When the assignment is made before patent, the claims are subject to change by curtailment or enlargement by the Patent Office with the acquiescence or at the instance of the assignee, and the extent of the claims to be allowed may ultimately include more than the assignor intended to claim. This difference might justify the view that the range of relevant and competent evidence in fixing the limits of the subsequent estoppel should be more liberal than in the case of an assignment of a granted patent. How this may be, we do not find it necessary to decide. We can well be clear, however, that if it is proper to limit the estoppel available for an assignee after patent as against his assignor by reference to the state of the art, *a fortiori* is such reference relevant where the estoppel is sought by the assignee before patent. In the light of this conclusion, we must now turn to the facts to which it should be applied.

The art which O'Connor entered was that of a composition of materials for insulating purposes, of leaves of fibrous material like paper superposed one on another and united by an adhesive binder coating the leaves, subjected to heat and pressure and hardened into a compact mass and rendered capable of high resistance to the electric current. In the specification of his patent he disclosed his idea of the defect of the then art, which he proposed to remedy by his process, as follows:

"Heretofore insulation material such as cardboard, composed of layers of paper glued together, has proved more or less unsatisfactory because of various defects, such as absorption of moisture from the atmosphere, inability to resist heat and chemical action, and lack of physical strength. Insulating material . . . must be free from these defects, and, in addition, must possess high dielectric strength."

He proposed to achieve his purpose by use of paper or cardboard, which was old for such purpose, by a binder of bakelite or phenol and formaldehyde, also well known for such use, by hydraulic pressure of 800 lbs. and steam heat, followed by cooling and then by baking in an oven at high heat and low pressure. There was indeed nothing new in O'Connor's invention but the two-step of pressure and heat, cooling and baking. If this two-step process was new, and the estoppel requires us to hold as against O'Connor that it was, his assignee had a right to claim the application of it as new, not only to flat articles of composition but also to non-planiform articles as in the 11th and 12th claims; for though O'Connor had not made such a claim, his original specification foreshadowed it as reasonable. In view of the art, however, it is very clear that the 11th and 12th claims must be read to include as an essential element of the combination therein claimed, the two-step process. Without this, there was nothing new in them in the field to which they applied.

The 11th and 12th claims were made by the company as assignee after O'Connor had left the company's employ and were not allowed until four years after O'Connor had participated in the making of the composition herein complained of, and for three years thereafter the company made no objection to his continuing the manufacture. But it is said, the assignee was entitled on O'Connor's original specifications to base claims which did not contain as an element the two-step process, because the 6th of his original claims was even broader than the 11th and 12th claims as subsequently made and allowed. It was as follows: "The process of manufacturing insulating material which consists in superposing layers of coated paper and applying heat and pressure thereto." This was promptly rejected by the Patent Office as it must have been in the then state of the art. It was so absurdly broad and all-inclusive as almost to

indicate that it was made to be rejected. O'Connor's signature to such a claim under the circumstances of course does not estop him when in fact it was not allowed; and certainly should not be used to bolster up a broad construction of the 11th and 12th claims when, as we have said, the state of the art must limit them.

We are clear then that the estoppel of the 11th and 12th claims against O'Connor does not extend to a single step process such as he has participated in as partner, stockholder or officer; and if it does not affect him, *a fortiori* does it not affect the respondent company.

This result makes it unnecessary for us to consider the objections that the Formica Company is not affected by an estoppel which would operate against O'Connor, or that the alleged nominal character of the consideration moving to O'Connor can not support an estoppel.

Decree affirmed.

IN THE MATTER OF PETITION OF EAST RIVER
TOWING CO., INC., FOR LIMITATION OF LIA-
BILITY OF THE STEAMTUG EDWARD, HER
ENGINES, ETC.

CERTIFICATE FROM THE CIRCUIT COURT OF APPEALS FOR THE
SECOND CIRCUIT.

No. 81. Argued November 25, 1924.—Decided December 8, 1924.

1. An action at law brought under § 33 of the Merchant Marine Act of June 5, 1920, c. 250, 41 Stat. 988, to recover damages for the death of a seaman from personal injuries suffered in the course of his employment, is subject to the injunction provided by Admiralty Rule 51 in aid of limitation of liability proceedings. P. 366
2. The Merchant Marine Act, § 33, did not impliedly repeal the statute regarding limitation of liability of shipowners (Rev. Stats., §§ 4283, *et seq.*) so far as claims or suits based on personal injuries to, or death of, seamen are concerned. *Id.*